CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES
https://cajmtcs.centralasianstudies.org

Volume: 04 Issue: 2 | Feb 2023 ISSN: 2660-5309

THE EXPERIENCE OF EUROPEAN COUNTRIES IN IMPROVING THE QUALITY CONTROL OF PRIMARY CLASS STUDENTS' MATHEMATICS KNOWLEDGE

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This article considers the experience of European countries in improving the quality control of primary school students in mathematics on the example of the Great Britain and Germany.

ARTICLEINFO

Article history:
Received 6 Dec 2022
Revised form 5 Jan 2023
Accepted 7 Feb 2023

Key words: *improvement, education, primary school teacher, mathematics, methodology, experience, Germany, Great Britain, quality control.*

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The formation of the experience of European countries in improving the quality control of primary school students in mathematics as an independent democratic European country involves the development of the national education system, its adaptation to the conditions of a socially oriented economy, transformation and integration into the European educational space. The pace of the inclusion of education in Uzbekistan in the international educational space largely depends on the level of training of the new generation of teachers of primary mathematics. The study of foreign experience in the training of pedagogical personnel for the purpose of creative use of it in reforming the educational system of Uzbekistan can become fundamental in this process.

The relevance of the study is based on the contradiction between the requirement of internationalization of education and the lack of generalized information about foreign experience in training teachers of primary grades in mathematics. The study of this problem can serve as a guideline in predicting the processes of development of teacher education in Uzbekistan, taking into account the characteristics of our society and the specific tasks facing teacher education in the European cultural space.

An analysis of the studies indicates a steady interest in the problem of training primary school teachers in mathematics. Many domestic and foreign scientists-researchers devoted their research to the issues of history and theory of foreign pedagogical education [1]. Aspects of the history of primary school, theoretical and practical training of primary school teachers are analyzed (among others) in the works of domestic and foreign researchers [2].

At the same time, the peculiarities of the training of primary school teachers in mathematics in foreign countries have not been fully studied. Knowledge of the traditions of training teachers in the Western countries, which are leaders in the education system, will make it possible to creatively use the progressive ideas of national experience.

The purpose of the article is to analyze the training of primary school teachers in mathematics in European countries, taking into account the potential for the creative application of foreign pedagogical experience in domestic educational practice. As a subject of study, the systems of training primary school teachers in mathematics from highly developed European countries - Great Britain and Germany, were chosen, since it was in these countries that the first specialized educational institutions of this profile appeared in the XVIII century. In the XIX century, systems of professional teacher education developed in Great Britain and Germany, which contributed to the preparation of highly qualified specialists.

Features of training of primary school teachers in mathematics in the Great Britain: The evolution of the training of primary school teachers in mathematics in the UK went through three stages: 1900-1970 - the heyday of the progressive traditions of training primary school teachers; 1970-1985 - universalization of teacher education; 1985-2000 - standardization of teacher education.

The first stage (1900-1970) is characterized by significant progress in the field of primary school teacher training. Future specialists were educated in two-year pedagogical colleges, which gradually established ties with universities, but existed independently of them. Vocational and pedagogical training of college students was separated from school and carried out in research and experimental work ("student-tutor" scheme). Curricula, providing for the study of special subjects, focused on teaching methods [3].

At the second stage (1970-1985) the universalization of pedagogical education took place. Economic and social improvements in the country in the 70s of the twentieth century necessitated the transition to higher pedagogical education of primary school teachers. Some of the pedagogical colleges were closed, the rest became part of the university structures [3]. At this stage, a multi-level and multi-variant system of professional and pedagogical education was created in the UK, which included three independent, but interconnected stages of training future teachers in colleges and universities. At the level of the first stage (3 years), theoretical and practical training of students on the subject of specialization was carried out in parallel with psychological and pedagogical disciplines. Graduates received a bachelor's degree in education. At the level of the second stage (1 year), students underwent only vocational and pedagogical training. Students who, for some reason, did not want to master the profession of a teacher, continued their studies in the 3rd and 4th years to obtain a bachelor's degree in humanities or natural sciences. At the level of the third stage (1 year), highly qualified specialists were trained, who received a master's degree in education [4].

In the early 80s of the XX century, in the system of higher education in Great Britain, there was a contradiction between the high demands placed on the teacher by society and the insufficient level of his professional training. Therefore, the government of the country issued a number of legislative documents with the aim of reforming secondary and higher education. The directions of the reform of teacher education were:

1) the introduction of standardized requirements for teacher qualifications;
2) state accreditation of curricula and basic teacher training programs;
3) development of equal partnership of pedagogical educational institutions and schools in the professional training of teachers [5].

The reform of teacher education contributed to the growth of the prestige of the teaching profession, while it provided for increased requirements for university applicants and their graduates. When applying to universities, applicants, in addition to a certificate of education of an advanced type, had to submit a characteristic issued by the school, pass an interview or test that determines the applicant's inclination to teaching and the motive for entering a higher educational institution. For the first time in the history of English education, a qualification characteristic of a graduate of the pedagogical department of the university was developed. Professional and pedagogical standards for the training of primary school teachers began to correspond to the university level of education [5].

The third stage (1985-2005) is characterized by systemic processes for the standardization of teacher education. This was due to the socio-political events in the UK, when the social optimism of the 60-70s of

the twentieth century about the possibilities of education began to give way to disappointment due to the economic downturn [4]. In the early 90s of the XX century, about a third of future primary school teachers in Great Britain studied at universities, the rest - at teacher training colleges and institutes of higher education. Due to the inconsistency of levels in the system of training primary school specialists, there was a need to create a single educational institution that would combine scientific, theoretical and practical training of teachers.

Therefore, in 1993 there was a reform of higher pedagogical education in Great Britain. This led to the abandonment of special higher pedagogical institutions (three-year pedagogical institutes and colleges). They were reorganized into four-year institutions of higher education at a multidisciplinary level, which began to train specialists who have the opportunity to work both in primary and basic secondary schools. The institutes received the right to issue qualification certificates and to award the scientific degree of bachelor of pedagogy [5].

In the second half of the 90s of the twentieth century, the center for the practical training of English primary school teachers gradually moved to the school. Partnerships between schools and teacher training institutions have strengthened the practical focus of teacher training.

Until the 1960s, the theoretical aspect dominated the curricula for the training of primary school teachers. Among the disciplines of the pedagogical cycle were: psychology, sociology, history of pedagogy and philosophy. Since the 1970s, the integration of academic subjects has become a characteristic feature of vocational and pedagogical training. In UK colleges, integrated programs "Interaction in the learning process", "Course on upbringing and education" were used. The last course contained materials on the history and philosophy of pedagogy, sociology, general and developmental psychology, on the methods of school hygiene and school studies. However, a unified course on the theory of pedagogy, built on general methodological and methodological principles, was never created.

The knowledge of graduates of pedagogical educational institutions was determined by a system of requirements: understanding the purpose of education according to the age characteristics of students; application of teaching methods, taking into account the intellectual potential of students; identification of both gifted and mediocre children; preparation for national testing.

The primary school teacher training curriculum of the 90s of the XX century, which is still relevant today, included four components: the course of the main subject; a program course depending on the type of school and the age of the students; pedagogical course; practice at school [4].

Due to positive trends in the UK education system after the reform of 1989-1992, the pedagogical cycle became the main one in teacher training, which has been preserved to this day. The study of the history of pedagogy, the philosophy of pedagogy, the psychology of learning, comparative pedagogy takes more than 25% of the study time. Every week students attend at least three lectures on psychological and pedagogical disciplines. Pedagogical practice (25% of the total teaching time) is an essential element of teacher education [4].

In the English system of training primary school teachers in mathematics, there are two forms of school practice: traditional (long-term with a break from college classes) and serial (short-term without interruption from classes, can last half a day, a day, a week). Pedagogical practice includes: visiting a school in order to study the features of the educational process, viewing and analyzing demonstrative lessons, micro-teaching, independent training sessions.

That is, the main direction of professional and pedagogical education of future primary school teachers in the UK is the practical pedagogical training of specialists. On the one hand, during pedagogical practice, the main attention of students is directed to mastering the methods of planning, organizing and managing the pedagogical process, as well as to self-realization, on the other hand, pedagogical practice ensures that students master advanced pedagogical experience.

Pedagogical institutions in the UK, when recruiting applicants, pay attention to their personal and mental qualities: 1) the ability to build relationships with students and teachers; 2) the presence of a sense of humor; 3) the desire to work in a team; 4) predisposition to professional and personal communication; 5) the ability to solve difficult life and pedagogical situations [4].

Features of training primary school teachers in mathematics in Germany: Germany is one of the most developed European countries with historical traditions in the formation of teacher training. The high general educational level of the German population largely determined the progressive economic development of the state after the Second World War. Each state of Germany was responsible for the sphere of education separately. Between the lands there was coordination on the development of the education system. In the field of vocational training, the federation had full competence in the main part of the program. Each land set its own terms of training for future teachers - from teachers' seminaries to higher schools with two or three years of study [6]. Thus, the higher pedagogical school remained the main type of educational institution for training primary school teachers for quite a long time. Until the mid-60s of the 20th century, in most states of Germany, the training of elementary school teachers lasted two years. The three-year term was introduced in different lands at different times. For example, in Hamburg - in 1945, and in Baden-Bürttemberg - only in 1965 [7].

The high level of social standards of the 70s - 80s of the XX century contributed to the accelerated development of the education system and the growth of costs in this area. The German government attached great importance to the material support of teachers, which popularized the teaching profession. But the requirements for the level of professional training of personnel have also increased, although the system of teacher education in Germany has retained the conservative model that developed in the 20s - 30s of the twentieth century [5].

Therefore, there is a need to reform the education system, aimed at providing all teachers with an academic education. Such levels of teacher training were determined - at universities (Hamburg, Hesse) and higher pedagogical schools, which legally belonged to universities. The teacher training structure was aligned with the "University Model". There was: 1) an increase in the terms of study up to three years (1965), in Bremen and Bavaria - four years; 2) the abolition of confessional division (late 1960s); 3) recognition of pedagogical institutes as scientific educational institutions with the right to defend dissertations (1967); 4) the growth of the scientific nature of the education of subject teachers; 5) development of teaching practice (1970) [7].

At the same time, the best material and scientific resources have rallied: since the mid-60s of the twentieth century, there has been a concentration of pedagogical institutions - the lands of Germany have united pedagogical schools. They performed educational and scientific functions as "pedagogical institutes". As a result of merging and joining universities, the number of teacher training schools decreased from 54 in 1958 to 18 in 1973 [3]. A new type of higher pedagogical educational institutions has optimized the pedagogical process, expanded access to higher education, and provided cyclical training of specialists. From 1970 to 1982, the number of university students increased from 534 thousand to 1200 thousand people [5]. The confessional training of elementary school teachers remained a problem. In 1969, 32 out of 54 higher pedagogical schools in Germany had a confessional character: 20 Catholic and 12 Evangelical.

During the modernization of the higher pedagogical school, the issue of introducing uniform rules, terms and content of teaching students of pedagogical specializations, eliminating the difference in pay for teachers of different types of schools, and providing teachers with equal opportunities for advanced training was discussed. In 1973, the "General Educational Concept" was adopted, which unified the training of teachers. But in most lands it was not fulfilled. Only in some cities of Baden-Wurtenberg and Lower Saxony were special institutes created to train teachers of real (incomplete secondary) schools, in Bavaria a state institute was opened to train teachers of real and basic schools. At the same time, in 1975, the West German Conference of Rectors of Pedagogical Higher Educational Institutions and Universities developed "Theses on the training of teachers". They included a proposal on the need to move to the training of teachers for different levels of the general education school. For the possibility of teaching in primary school, the following levels were offered: A1 - kindergarten teacher with the right to teach in primary school (grades 1-

4); A11 - an elementary school teacher with the right to work as an educator in a kindergarten; B1 - primary school teacher with the right to teach at the first stage of secondary school (grades 5-10); B11 is a teacher of the first stage of a secondary school with the right to teach in an elementary school [5].

The democratic reforms of the 1990s in the German education system changed the content and structure of the pedagogical process. Among the positive results: the freedom of choice by students of disciplines for specialization, supervisors and research topics; limiting the number of compulsory classes; reducing the number of exams, replacing them with tests; refusal of lecture courses provided with teaching aids.

The content of the training of primary school teachers in mathematics in modern pedagogical institutions in Germany includes: 1) the study of one or two school subjects and the methods of their teaching; 2) study of the main subject determined by the city education authority; 3) mastering the basics of pedagogical knowledge when studying the courses: "Introduction to Pedagogy", "School Pedagogy", "Psychology".

Thus, the course "General Pedagogy" contains philosophical-pedagogical and historical-pedagogical information, as well as topics on comparative pedagogy. The course "School Pedagogy" is significant, covering the problems of organization and management of the school, school law, and assessment of academic performance. Its content provides for the study of elective subjects (philosophy, sociology, political science, theology). At the same time, the number and content of these disciplines is variable in all lands.

An essential part of the training of primary school teachers is the independent work of students: writing essays, performing creative tasks, projects, reports, reports, which, in the form of presentations at seminars, are a condition for admission to the final control.

As a result, theoretical training in all states of Germany ends with the first state exam. Moreover, oral and written exams in a number of lands are supplemented by a test of practical knowledge, skills and abilities. As part of a three-year theoretical training, future primary school teachers undergo educational practice in the form of weekly visits to school lessons with discussions under the guidance of a teacher. In some lands there is also a six-week practice. The duration of teaching practice can last up to 3 years. This practice is organized in such a way that future teachers get a full-time job at the school. Their teaching activities are led by experienced teachers. Upon completion of the cycle of practical training, the future teacher passes the second state exam, which tests the skills of conducting educational work at school, its theoretical justification [2].

For the practical psychological and pedagogical training of German teachers, communicative trainings are relevant. In order to acquire the skills of conducting a conversation, students use special exercises to form the ability to perceive information, optimally organize their own speech statements, and overcome aggressiveness [5].

Postgraduate pedagogical education in Germany includes two areas: advanced training of teaching staff (with the aim of professional improvement of the teacher in accordance with his basic specialty) and additional training (providing the teacher with a new pedagogical specialty or improving his professional qualifications for moving to a higher position). The features of the German system of training primary school teachers are: 1) the absence of a unified nationwide system of teacher training; 2) mutual agreement and recognition of diplomas of higher educational institutions of a pedagogical orientation in all states of Germany. Despite the general unification of the structure of teacher training in the country, each of the Länder has its own rules regarding: 1) terms of teacher training (theoretical and practical phases); 2) requirements for the content of education (the minimum number of hours for each discipline); 3) forms and content of state examinations; 4) qualifications awarded to teachers. The features of the primary school teacher training system in Germany also include: 1) teacher training by higher educational institutions, mainly universities; 2) development of a course towards the equivalence of German teaching diplomas in Western European countries.

FINDINGS

An analysis of the traditions and experience of primary school teacher training systems in Great Britain and Germany allows us to determine its attributes that are inherent today in all countries of the European educational space:

- obtaining by future teachers of primary classes in mathematics a complete higher education;
- the presence of career guidance, competitive selection to universities on the basis of personal and organizational qualities of applicants;
- interaction of pedagogical universities with schools, educational authorities;
- strengthening the practical orientation of the disciplines of the psychological and pedagogical cycle on the study and improvement of the educational process at school;
- the formation of a modern image of a teacher by granting graduates of pedagogical universities the status of a civil servant.

Let us summarize the requirements for a modern primary school teacher in mathematics in the higher education systems of European countries.

The primary school teacher should be able to:

1) working with students in the classroom: plan and organize the educational process and manage it; create conditions for students and respond effectively to their educational needs; control, correct and objectively evaluate the results of students' learning activities.

2) working with the class as a whole: to teach in a multicultural classroom; synthesize knowledge and skills from different subject areas; to include children with special developmental problems in the general education school environment.

3) being in a school team: work and plan their activities and organize systematic work to improve their quality; use information and computer technologies for training and management purposes; organize project activities at the school, interschool and international levels; participate in the management and management of the school.

4) working with parents and school staff: to give professional advice to parents; Build partnerships with all school staff.

Based on the analysis of the traditions and experience of the systems for training primary school teachers in mathematics in Great Britain and Germany, we single out stable European traditions and positive features that can be creatively used in Uzbekistan. For the training of primary school teachers in mathematics in Uzbekistan, the organization of career guidance work is especially interesting: 1) diagnosing the physical and mental predisposition of applicants to study and master the program; 2) collection of additional information about the moral and ethical character of applicants; 3) creation of centers for professional and pedagogical training, involvement of the most experienced primary school teachers in mathematics in partnership with universities (Great Britain); 4) an interview with applicants in order to identify abilities for pedagogical activity (Germany).

Of particular interest to the system of training primary school teachers in mathematics in Uzbekistan are such features of foreign systems of higher education as the motivation for choosing the teaching profession through increased funding for the education system and strengthening the image of teachers by granting the status of a civil servant.

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